

REMARKS

In the Office Action dated October 2, 2008, claims 1-22 and 24 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chang et al U.S. 2003/0032352A1. The Examiner made the rejection final. In response, applicant has amended claim 1 via the present Amendment, submits a Request for Continuing Examination, together with a Second Declaration of Glenn C. Calhoun, one of the joint inventors of the subject matter of the present patent application, as well as the following remarks. Accordingly, applicant requests reconsideration of the present patent application.

In the Office Action, claims 1-22 and 24 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chang et al U.S. 2003/0032352A1. The Examiner states that the step of recycling acetone would be obvious because, although Chang et al does not disclose a solvent recycling step, a polymer chemist of ordinary skill in the art would be motivated to modify Chang et al by recycling the previously-removed acetone because the recycling of acetone and the addition of water (steps E and F in claim 1) are merely an optimization of the process as a whole, and "have no effect on the overall claimed process". In particular, the Examiner states that "the applicant must provide data reveal [sic] the unexpected results of completing steps E and F."

The goal of applicant's process is to obtain a low viscosity aqueous dispersion of the polymer with little or no residual acetone. To that end, the preamble of claim 1 has been amended to clarify that applicant's process is not merely to solution polymerize a polymer, but to prepare an aqueous dispersion of the polymer. Support for this amendment can be found in the specification as filed at page 3, lines 5-7 of paragraph 0006 as well as in the title of the application itself.

Applicant submits a Second Declaration of Glenn C. Calhoun, one of the joint inventors of the subject matter of the present invention herewith. In the Second Declaration, the Examiner will note that the inventor Calhoun performed an experiment to produce the desired product by the method of claim 1 and then in a side-by-side comparison by the method described in Chang et al. The only difference between the two experiments

described was steps E and F of claim 1. As the Examiner can see, the process described in Chang et al is not practical for a typical batch reaction, particularly one on a commercial scale. As the inventor Calhoun concludes, all of the solvent cannot be removed because of the high viscosity of the polymer material which reduces the amount of solvent that can be distilled from the product and recycled. In contrast, the addition of water to the polymer solution in the process of the present patent application allows the product to maintain a low viscosity throughout the process and to recover enough acetone rich distillate to run the next batch without additional purification steps. These steps make the process commercially practical.

As an example, the applicant currently uses the claimed process on a commercial basis to make 45,000 lb batches of polymer solution. If applicant used Chang et al's process, it would result in obtaining a semi-solid mass of about 10,350 pounds (5.15 tons) stuck on and wrapped around the end of an agitator. As a result, (1) the equipment would most likely be ruined, (2) the mass of polymer could not be re-dissolved in water in any reasonable time period due to its physical size, relatively low surface area and large mass, and (3) it would be extremely difficult to distill off the solvent because of the huge physical mass and very high viscosity of the polymer and because of the need to use low temperatures to avoid degradation of the polymer mass. The Chang et al process is thus simply not commercially viable.

In contrast, claim 1 requires adding water to the reaction mixture after polymerization, removing the acetone from the reaction mixture after adding the water, and finally using the acetone that has been removed to prepare the solvent solution of step A. These limitations distinguish claim 1 from Chang et al because Chang et al teaches neither (1) adding water after polymerization and before removing the solvent, nor (2) recycling the acetone to prepare the mixed solvent solution for polymerizing the polymer.

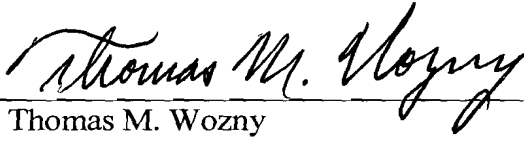
In summary, not only is there no suggestion or motivation in Chang et al to modify the Chang et al reference to add water and recycle the solvent, but there is no reasonable expectation of success, as shown by the enclosed Second Declaration of Glenn C. Calhoun. Finally, the prior art Chang et al reference clearly does not teach or suggest such steps, and as a result, applicant believes claims 1-22 and 24 are not obvious in view of Chang et al.

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An effort has been made to place this application in a condition for allowance and such action is earnestly requested.

Respectfully submitted,

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